

THYROID DISEASE IN PREGNANCY



BY

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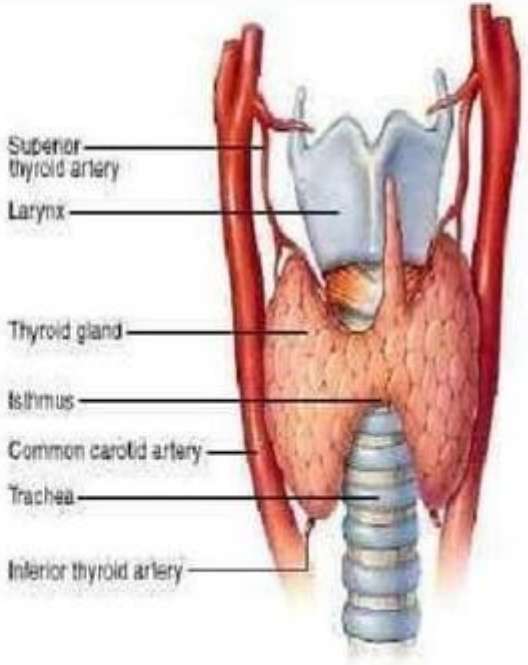
INCIDENCE

- Most common endocrine disorder in pregnancy.
- Effects 1-2% pregnant women.
- Hypothyroidism- 0.05%
- Hyperthyroidism- 0.05-0.2% (Grave's – 90%)
- Postpartum thyroiditis- 5-10%



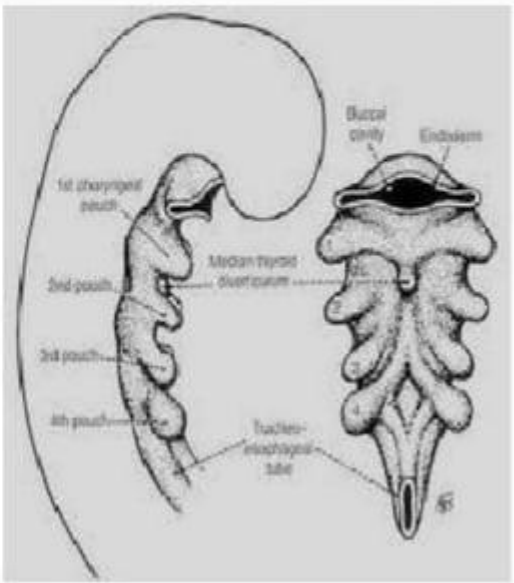
INTRODUCTION

- Thyroid; derived from Greek word – means shield gland.
- Highly vascular organ.
- Brownish red, 2 lobes (4x2cm), one isthmus(2x2cm).
- 30% have pyramidal lobe.
- Weight: 15-20g



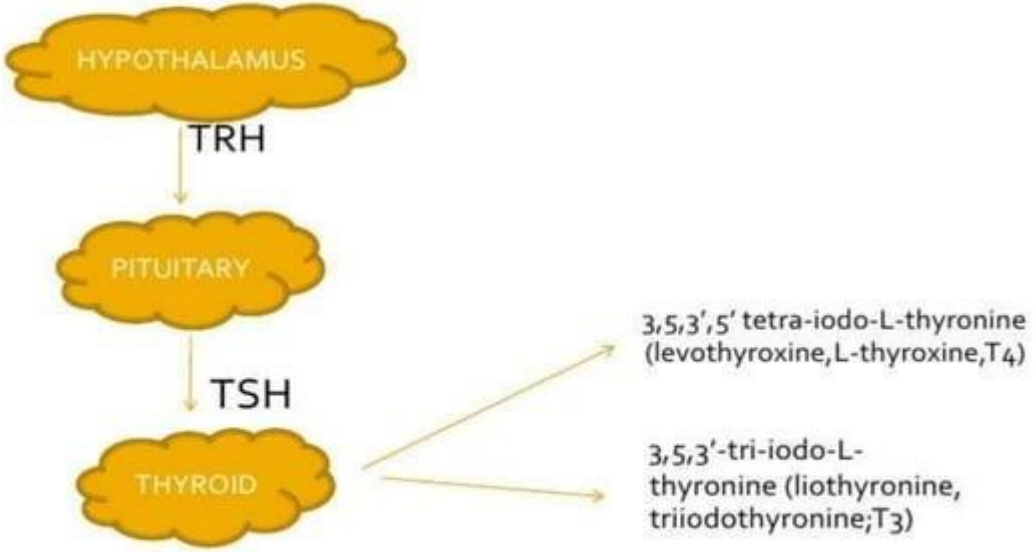
DEVELOPMENT

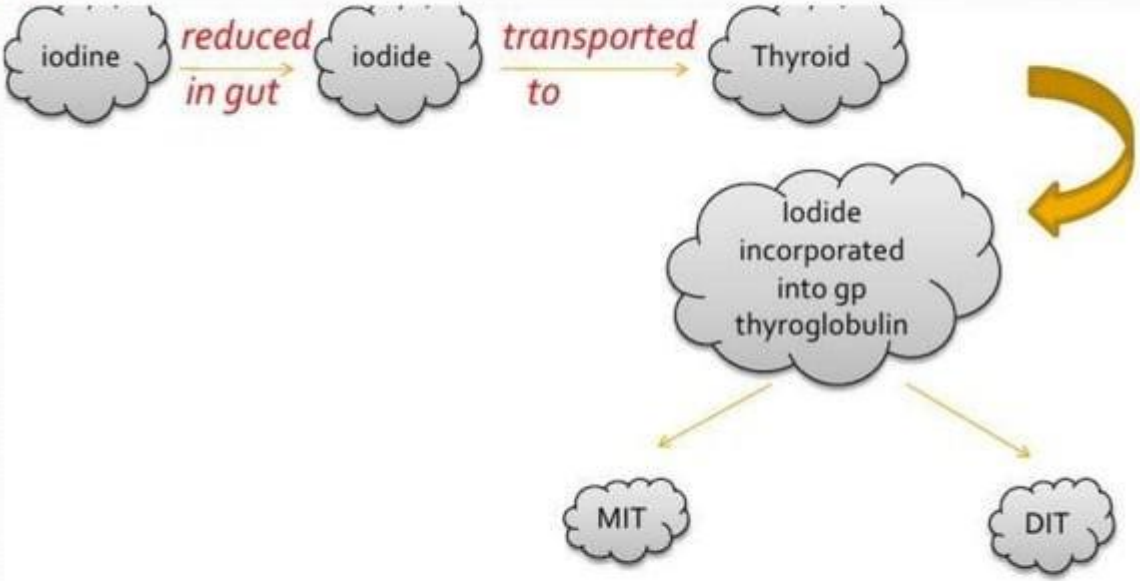
- Fetal thyroid:
- Form as a midline outpouching of the anterior pharyngeal floor, migrates and reaches its final position by 7 weeks.
- Lateral contributions from the 4th and 5th pharyngeal pouches give its bilateral shape by week 8-9.



NORMAL CHANGES IN PREGNANCY

- Hypothalamic-Pituitary axis governs thyroid physiology.





- *T_4 enters circulation by direct glandular secretion.*
- *T_3 is produced by mono-deiodination of T_4 in periphery.*

CHANGES DURING PREGNANCY

- 20% increase in thyroid gland size due to hyperplasia and increased vascularity.
- Increase in Estrogen: increased TBG, decreased Free T4
- HCG rise: Structural similarity with TSH: increase in T4/ T3, decrease in TSH
- Increased peripheral metabolism of thyroid hormones: Placenta: type II /III deiodinases Fetus dependent on Type II for T4 T3
- Decline in availability of iodide related to increased renal clearance and overall losses to the fetus and placenta

PRE PREGNANCY & ANTENATAL

- Pre pregnancy management of thyroid disease
- During ante natal visit check TFTs if history suggestive



EXAMINATION OF THYROID



- ***INTRODUCTION***
- ***SHORT HISTORY***
- ***INSPECTION***

Ask to degulgitate or take a sip of water

swelling size,site,shape,margins,surrounding skin,visible pulsations,scar marks

HANDS tremors





- ***PALPATION***

start with hands

check temperature,sweating,palmar erythema,clubbing,pulse(rate ,rhythm,volume,character)

Now move to neck

EXAMINE from front & behind to confirm inspection findings.





Positioning for a proper thyroid examination.

- LOCATE TRACHEA
- RETROSTERNAL GOITER





- ***PERCUSSION & AUSCULTATION***
- LYMPH NODE EXAMINATION
- LOOKING FOR EYE SIGNS
- KNEE JERK

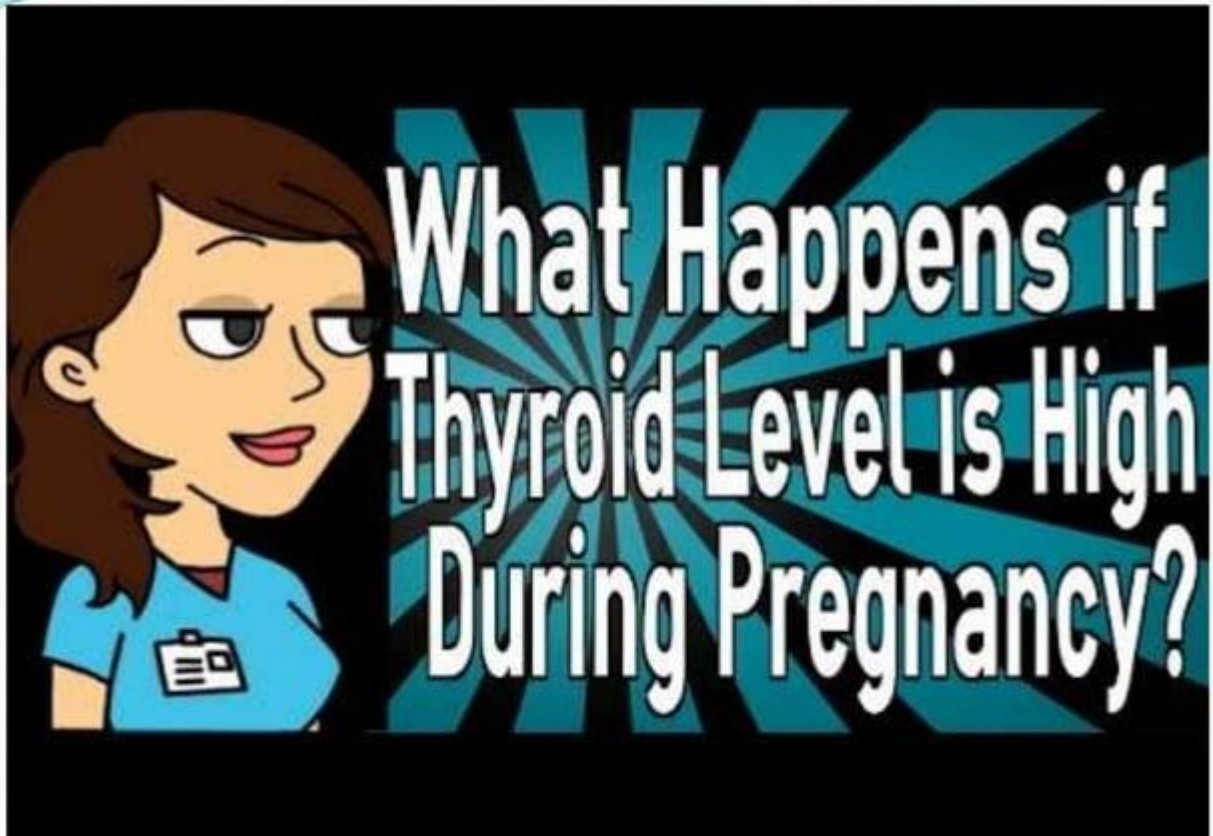




HYPERTHYROIDISM

- 0.2% of pregnant women
- 95% Grave's disease
- TFTS:-elevated free T4 T3 levels and depressed TSH




What Happens if
Thyroid Level is High
During Pregnancy?

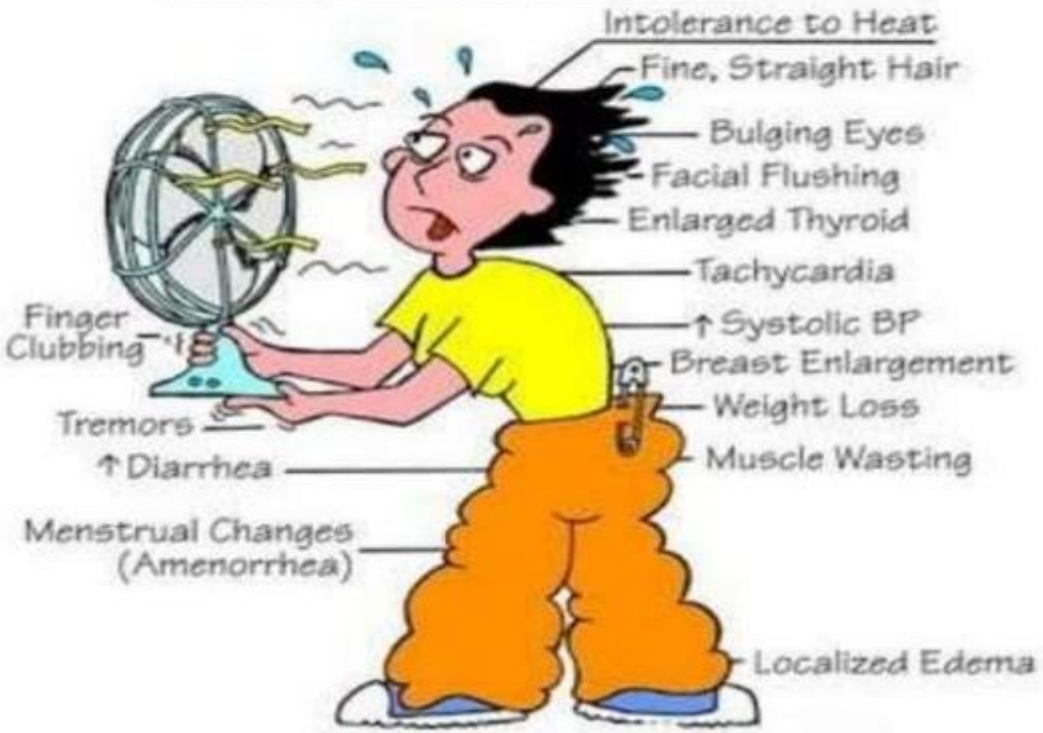
MATERNAL RISK

- Heart failure
- Thyroid storm
- Preeclampsia(11%)
- Anemia
- Infection
- Fever
- Psychosis, seizure, coma
- Diarrhea, pain, vomiting
- Atrial fibrillation
- Preterm
- Spontaneus loss

FETAL RISK

- Fetal tachycardia
- IUGR
- Fetal goiter
- IUFD
- Stillbirth
- Non immune hydrops
- Craniosynostosis
- Mental deficiency
- Poor wt gain, feeding, jaundice, hepatospleenomegaly

HYPERTHYROIDISM

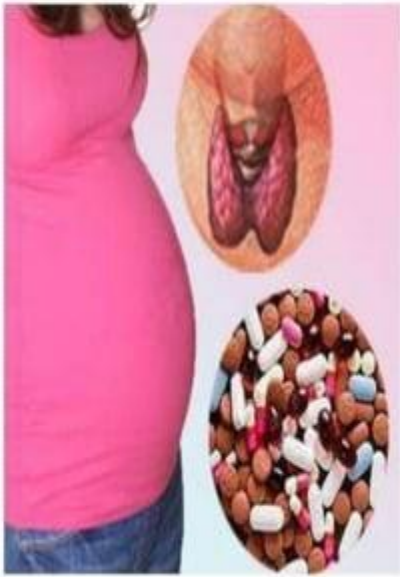


MANAGEMENT

- It is essential to maintain euthyroidism in pregnancy
- Medical treatment involves PROPYLTHYROURACIL(PTU) & CARBIMAZOLE

Both cross placenta and are not teratogenic but make fetus hypothyroid,so minimal dose should be used.

- TFTs should be done every 4-6 weeks during pregnancy.
- B-blockers for tachycardia,tremors and palpitations.
- Surgical removal is rare.



- The dosage of carbimazole sufficient to control hyperthyroidism is **15-100 mg daily**, administered as divided doses 3 times daily.
- The appropriate dosage of PTU can range from **300 mg daily to a maximum dose of 1200 mg daily** in divided doses 3 times daily.
- Once serum thyroid hormone levels return to normal, it is necessary to **decrease the dosage to 5-20 mg daily of carbimazole or 50-300 mg daily for PTU in divided doses.**
- **When doses of PTU are > 300 mg/day or > 20 mg/day for carbimazole are taken long term, fetal goiter and hypothyroidism may result.**

HYPOTHYROIDISM



- 1% of pregnant women
- Mostly due to Hashimotos thyroditis or idiopathic
- Direct pituitary causes are rare.

 - ↑TSH & Normal FT4 & FT3
 - 2-5% in pregnancy
 - 31% positive for TPO Ab
 - Associated with Gest HTN, preterm deliveries, stillbirths, abruption.
 - Fetal psychomotor development may be impaired
 - Routine screening not recommended

HYPOTHYROIDISM





EFFECTS

- ON PREGNANCY
 - Prolonged infertility t/t
 - Recurrent abortions
 - Preeclampsia 5-10%
 - Placental abruption 1%
 - Preterm delivery 10-15%
 - Anemia
 - Myxedema coma
 - Malpresentation
 - LBW
 - PPH
 - Stillbirth
- ON FETUS
 - Neurodevelopmental delay
 - Deafness
 - Stunted growth
 - Peripartum hypoxia
 - Neonatal mortality



MANAGEMENT

- Levothyroxine sodium 1-2 mcg/kg/d (100 mcg/d).
- Measure TSH every 6-8 weeks.
- Newly diagnosed hypothyroid patient, a full replacement dose of levothyroxine should be instituted immediately.
- Thyroxine requirements of women with preexisting hypothyroidism increase during pregnancy and about 30-50% will need adjustment of their medication.



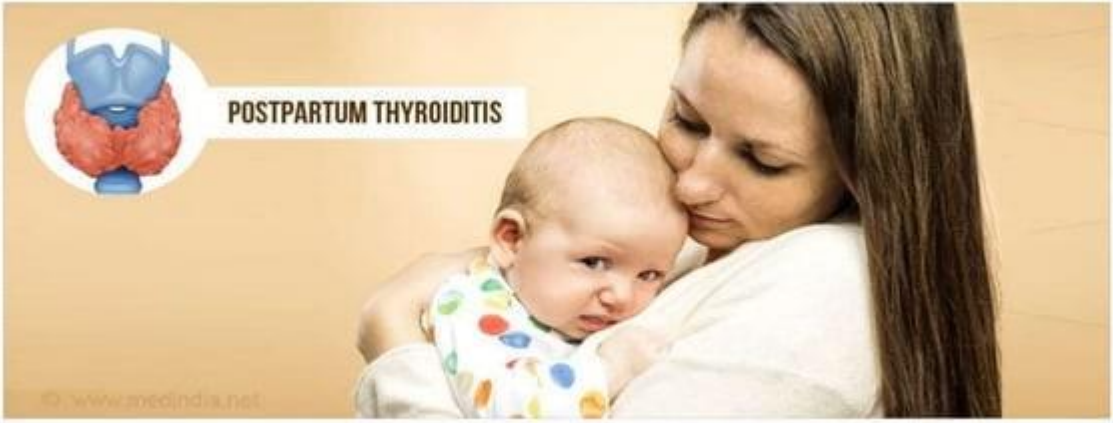
POSTNATAL MANAGEMENT

- Care of neonate
- Breast feeding
- Watch for signs/symptoms of maternal worsening



POST PARTUM THYROIDITIS

- Postpartum thyroiditis is an inflammation of the thyroid that occurs in women after the delivery of a baby.
- It occurs in approximately 5-10% of women.



WHO IS AT RISK FOR DEVELOPING POSTPARTUM THYROIDITIS?

Any woman with:

- Autoimmune disorders.
- Positive anti-thyroid antibodies
- History of previous thyroid dysfunction
- History of previous postpartum thyroiditis (20% of women will have recurrence of thyroiditis with subsequent pregnancies)
- Family history of thyroid dysfunction

HOW IS POSTPARTUM THYROIDITIS TREATED?

- Treatment depends on the phase of thyroiditis and degree of symptoms .
- Women presenting with thyrotoxicosis may be treated with beta blockers to decrease palpitations and tremors.
- Antithyroid medications are not used for the thyrotoxic phase since the thyroid is not overactive.
- The hypothyroid phase is often treated with thyroid hormone replacement .If the hypothyroidism is mild, no therapy.
- If thyroid hormone therapy is begun, treatment should be continued for approximately 6-12 months and then tapered.

CASE 1

- A 28yr PG presents in antenatal clinic at 11 weeks of gestation with swelling in front of her neck with no signs/symptoms of thyroid disease.

Q. HOW WILL YOU MANAGE HER?

Q. WHAT ADVICE YOU WILL GIVE HER?

Q. HOW WILL YOU MANAGE HER?

- Detail history including family history
- Examination of swelling
- Investigations including TFTs
- Obstetric ultrasound
- If pt is euthyroid repeat TFTs 4-6wks after
- If hypo or hyper manage with drugs accordingly
- Strict antenatal visits

Q. WHAT ADVICE YOU WILL GIVE HER?

- Counseling and reassurance
- Proper antenatal visits
- Proper compliance

CASE 2

- A 22 yr old PG presents with hyperemesis gravidarum and on TFTs increase T4 levels with no signs and symptoms.

Q.WHAT WILL YOU DO?

Q.HOW WILL YOU MANAGE HER INCREASED T4 LEVELS?

- **Q.WHAT WILL YOU DO?**

Manage the current symptom of the patient and reassurance, do obstetrical ultrasound, CBC , SE.

Q.HOW WILL YOU MANAGE HER INCREASED T4 LEVELS?

T4 levels are elevated due to suppression of TSH because of increased HCG levels.

This usually resolves by 20 weeks of gestation.

Don't give anti thyroid drugs.



THANK YOU